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## 1. Introduction

Mabey Hire have two types of Mechanical Bracing Strut, i.e. Standard and Light.

The Light Mechanical Bracing Strut is intended for use as a strut in conjunction with the following Mabey Hire waling systems:

- Super Shaftbrace
- Shaftbrace
- Multibrace

This booklet provides basic information about the Light Mechanical Bracing Strut and should be read in conjunction with the relevant User Information for the Waler System which has been selected.

The Struts are not intended for other applications.

For details of the Standard Mechanical Bracing Strut refer to separate set of User Information.

Refer to Appendix A for details of our site demonstrator service.

## 2. Design

No information on design is included in this booklet. Clients are strongly advised to ensure that a competent engineer is employed to provide a suitable design for excavation schemes requiring the use of Mechanical Bracing Struts.

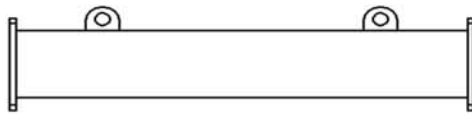
Mabey Hire offer a design service and can, on request, also provide information on the strength capacities of Mechanical Bracing Struts for clients undertaking their own designs.

## 3. Mechanical Adjustment

The Strut incorporates a mechanical screw for length adjustment which is designed to extend under conditions of no load and retract under conditions of no or low loading: e.g. as when first installed or as they become redundant after backfilling the excavation.

Once they are sustaining significant loads, adjustment of the struts is inadvisable and unlikely to be possible. Methods of working should therefore avoid the need for strut adjustment whilst heavily loaded.

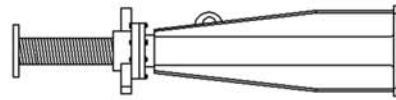
## 4. Identification of Components



Extension Units

Size: 180 x 180 x 8 SHS

Code	Length (mm)	Weight (kg)
LMBSP-076	250	35
LMBSP-077	500	50
LMBSP-078	1000	70
LMBSP-079	2000	110
LMBSP-080	4000	200

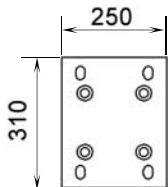


Screw Unit

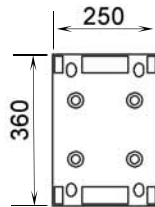
(925-1325 long)

Code: LMBSP-075

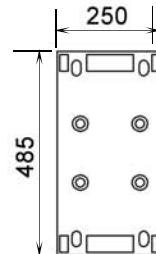
Weight: 115 kg



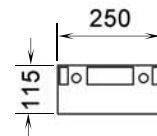
Connector Plate  
Code: MBSP-006  
Weight: 13 kg  
203x203 UC  
Shaftbrace



Connector Plate  
Code: MBSP-007  
Weight: 15 kg  
254x254 UC  
Multibrace

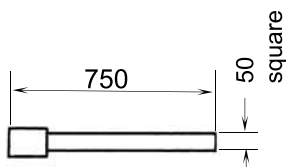


Connector Plate  
Code: MBSP-008  
Weight: 21 kg  
356x356 UC  
Super Shaftbrace

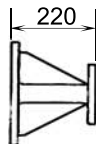


Clamp Plate  
Code: MBSP-009  
Weight: 6 kg

## Accessories



Short Handle  
Code: MBSP-012  
Weight: 8.5 kg



End Plate Connector  
Code: LMBSP-081  
Weight: 30 kg



Lifting Chains 10mm 4 Leg Chain Sling  
Code: SB-LSLG or SB-LSLG/SH. Weight: 47 kg  
Refer to Lifting Chain User Information for further details.

## 5. Stacking and Handling

Suitable firm level dry areas should be made available on site for stacking and pre-assembly work.

Suitable lifting equipment of adequate lifting capacity should be provided for off-loading, pre-assembly work, installation and dismantling.

Slings should always be carried out by suitably experienced and competent personnel.

Weights of components are given above.

Weights of complete assembled struts are given on Page 3.

Return pre-assembled struts are supplied from Mabey Hire's Depot.

Always stack in single layers wherever possible.

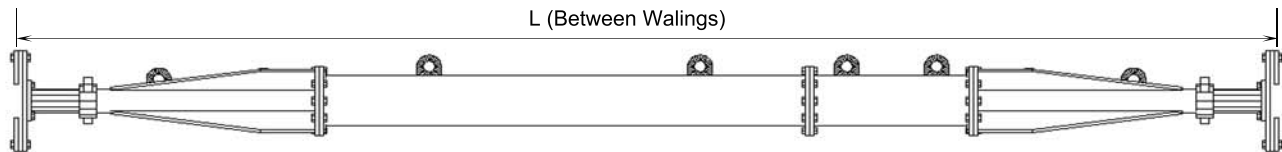
## 6. Transportation

Ensure struts are fully retracted

Ensure all equipment is loaded to the satisfaction of the lorry driver and securely restrained to the vehicle bed.

## 7. Table of Light Strut Assemblies

(Non standard strut assemblies may be available on request)



Code No.	Weight (kg)	Strut Configuration for Light Struts		Overall Length L (mm)	
		Extension Length (mm)		Min	Max
LMBS-00*	272	Screw Unit	-	1890	2690
LMBS-01*	322	Screw Unit	500	2390	3190
LMBS-02*	342	Screw Unit	1000	2890	3690
LMBS-03*	392	Screw Unit	1000 + 500	3390	4190
LMBS-04*	382	Screw Unit	2000	3890	4690
LMBS-05*	432	Screw Unit	2000 + 500	4390	5190
LMBS-06*	482	Screw Unit	500 + 2000 + 500	4890	5690
LMBS-07*	502	Screw Unit	1000 + 2000 + 500	5390	6190
LMBS-08*	472	Screw Unit	4000	5890	6690
LMBS-09*	522	Screw Unit	4000 + 500	6390	7190
LMBS-10*	572	Screw Unit	500 + 4000 + 500	6890	7690
LMBS-11*	592	Screw Unit	1000 + 4000 + 500	7390	8190

Struts should always be assembled as indicated in the table above.

\*NOTE: Use Suffix A for connection between Multibrace.

Use Suffix B for connection between Shaftbrace and suffix BK for Knee Brace connection between Shaftbrace..

Use Suffix C for connection between Super Shaftbrace and suffix CK for Knee Brace connection between Super Shaftbrace..

## 8. Connections: (All M20 Gr 8.8 bolts)

Screw Unit to extension }

Extension to extension }

8 No. M20 x 75 lg, Galv, Gr 8.8 (SHBP-M20x75)

Screw unit to end connector plate:

4 No. M20 x 60 lg, self colour, Gr 10.9

Countersunk socket head screws +

4 No. M20, self colour, Gr 8 nuts (MBSP-010)

Clamp Plate to end connector plate:

2 No. M20 Galv, Gr 8.8 bolts per clamp plate.

Length: 75mm required for 203 x 203 waler (SHBP-M20 x 75)

90mm required for 254 x 254 x waler (MBSP-011)

90mm required for 356 x 368 waler (MBSP-011)

Connection detail to Waler Rail

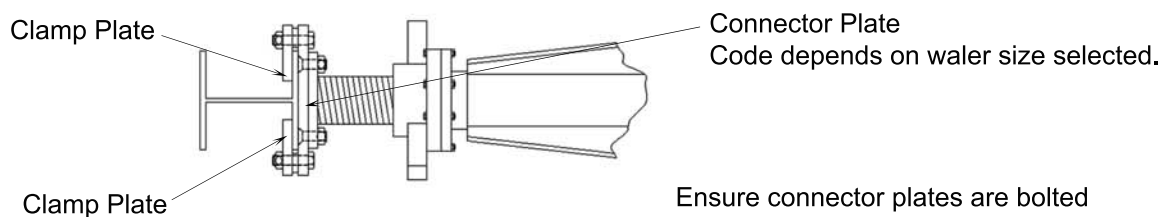


Figure 1.

Ensure connector plates are bolted to the screw unit as shown in the upright position.

Note: • Always fit 2 No. clamp plates (one top and one bottom) at each waling connection.

• If a non-standard strut / waling connection detail is being used, consult Mabey Hire Eng Dept for advice.

## 9. Assembly

The Bracing Strut is made to the correct length range where possible prior to delivery - with the clamp plates supplied separately. If the strut has to be altered to another range on site, always use 8 No. M20 x 75 long galv. Gr. 8.8 bolts for each intermediate connection.

## 10. Installation

- Ensure walings have been set to the required dimensions and pressurised if necessary before installing the struts.
- Measure the dimension between the walings.
- Ensure operatives have adequate access to the strut in its final position. Adjust the strut screw units equally to achieve the required dimension over the connector plates.
- Fit the top clamp plates, leaving the bolts slightly slack.
- Sling and lift the strut into position so that the top clamp plates are correctly located over the flanges of the walings. Check that the strut is square to the walings and that the strut is in line with the webs of the walings.
- Adjust the screw units so that the connector plates are tight against the walings.
- Fit the bottom clamp plates.
- Tighten all the bolts to the clamp plates.
- Release the lifting chains.

## 11. Precautions in Use

- Check that all bolted connections remain tight.
- Avoid striking the struts or laterally loading them by storing materials on them or by hanging or propping from them.
- Protect the screw units from concrete spillage etc., by wrapping in polythene.

## 12. Removal

- Avoid removing under load.
- Ensure operatives have adequate access to the strut.
- Support the struts from below, or sling with a suitable crane before attempting to release the screw units.
- Release the strut by screwing in the screw units. To start the screws moving it may be necessary to strike the handle of the nut with a sledgehammer. See Figure 2.

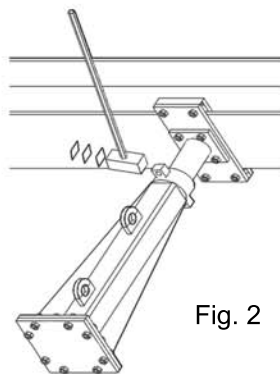


Fig. 2

- Once the strut is released, remove the lower clamp plates only and lift the strut clear of the excavation.

## 13. Maintenance

Screw adjustment is considerably eased if the interface between the nut and its bearing plate are kept well greased. See Figure 3.

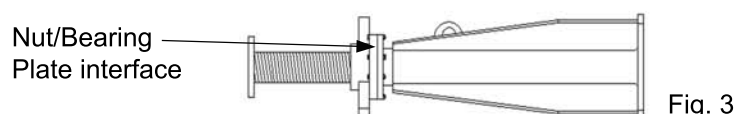


Fig. 3

## 14. General

Since our policy is one of continual improvement, components may vary in detail from the descriptions given in this publication.

## **User Information Appendix A : Provision of a Mabey Hire Site Demonstrator**

Mabey Hire can, subject to availability, offer the services of a Site Demonstrator. However, the Customer should note the following :-

### **A1. The Customers Responsibilities**

A safe system of work remains the Customers responsibility at all times. It is his responsibility to prepare for, organise and direct the operation including :-

- A1.1 Site induction for the demonstrator.
- A1.2 Preparation of a method statement.
- A1.3 A risk assessment.
- A1.4 Selection of lifting equipment and any other equipment required to undertake the work.
- A1.5 Positioning of the crane or lifting appliance.
- A1.6 Banking the crane.
- A1.7 Slings the components.
- A1.8 Assembling the components and installing them.

### **A2. Activities which the Mabey Hire Demonstrator is authorised to carry out**

Mabey Hire Demonstrator is authorised to :-

- A2.1 Assist in identification of Mabey Hire components.
- A2.2 Explain how they fasten together.
- A2.3 Point out slinging points and special methods of lifting as noted in the user information.
- A2.4 Demonstrate how to attach hoses and use pumps to extend/retract hydraulic braces.
- A2.5 Draw attention to the content of the user information.
- A2.6 Clarify queries with Mabey Hire scheme drawings.

The Demonstrator is NOT AUTHORISED to 'take over' or direct the installation.

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### **To : Mabey Hire Limited**

(Please return this completed form to the Mabey Hire depot supplying the equipment. Contact details for all the Mabey Hire depots are available both on-line at [www.mabeyhire.co.uk/depot-directions/](http://www.mabeyhire.co.uk/depot-directions/) and within our brochures)

From (Company Name) \_\_\_\_\_ Site (Address) \_\_\_\_\_

Tel.No. \_\_\_\_\_ Fax No. \_\_\_\_\_

### **Re : Provision of a Mabey Hire Demonstrator on site**

We confirm receipt of your User Information Appendix A - and that we would like to request the services of your Demonstrator on the following date(s) \_\_\_\_\_

Signed \_\_\_\_\_ Name (print) \_\_\_\_\_ Date \_\_\_\_\_